

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows.

1. (Cancelled)
2. (Currently Amended) A hammer drill for applying rotational forces and percussive forces to a drill bit, comprising:
a motor;
a percussive force converter mechanism driven rotationally by said motor for modifying percussive forces of said percussive member by changing the rotational speed ratio of said motor and said connector shaft;
a connector shaft driven rotationally by said percussive force converter mechanism;
a spindle capable of holding said drill bit, wherein the rotational force through said connector shaft is propagated;
a motion converter mechanism for converting the rotational force of said connector shaft to a reciprocating force in an axial direction in said spindle; and
a percussive member for applying a percussive force in an axial direction to the drill bit held in said spindle based on the reciprocating force converted by said motion converter mechanism,
~~A hammer drill according to claim 1, wherein said percussive force converter mechanism is a transmission mechanism, where, in said transmission mechanism, one of~~
comprises a plurality of gears with mutually differing numbers of gear teeth,
~~which receive the rotational force from said motor in order to rotate, and which~~
wherein the plurality of gears can move freely in [[the]]an axial direction of said connector shaft, and
wherein a shifting switch selects a gear from the plurality of gears and the selected gear is selectively meshed-meshes , by a[[the]] force of a spring, to gear teeth equipped on said connector shaft-side.
3. (Currently Amended) A hammer drill according to claim 2, wherein [[the]]mating teeth of [[the]]a gear that mates with the gear teeth of said connector shaft side are provided with sidewalls on one side in [[the]]an axial direction thereof.

4. (Currently Amended) A hammer drill according to claim 2, wherein ~~either one of~~ the gear teeth on said connector shaft side~~[[, or]]~~ and the mating teeth of said gear that meshes with said gear teeth~~[[,]]~~ have different axial-direction lengths on alternating teeth.
5. (Currently Amended) A hammer drill according to claim 2, wherein ~~either one of~~ the gear teeth on said connector shaft side~~[[, or]]~~ and the mating teeth of said gear that meshes with said gear teeth~~[[,]]~~ are provided every other tooth.
6. (Currently Amended) A hammer drill according to claim 2, wherein a sleeve is affixed to said connector shaft, wherein said sleeve is equipped with a spring that provides a force on said selected gear.
7. (Currently Amended) A hammer drill according to claim 2, wherein said ~~transmission mechanism~~ percussive force converter mechanism is provided with a shifting shaft between a pair of gears, wherein, when said shifting shaft is moved in the axial direction of said connector shaft to remove one gear, against the force of the spring, away from the gear teeth of said connector shaft side, ~~[[the]]~~ a second ~~other~~ gear is moved by the force of a spring to a position where the second ~~other~~ gear meshes with the gear teeth on the connector shaft side.
8. (Currently Amended) A hammer drill according to claim 7, wherein said shifting shaft is disposed ~~[[in]]~~ off-center relative to the center of rotation of a shifting switch on the axis of said connector shaft.
9. (Currently Amended) A hammer drill according to claim 7, wherein said pair of gears is equipped with a specific gap in the axial direction of said connector shaft, and a space for obtaining a neutral state in which ~~neither~~ none of the pair of gears meshes with the gear teeth on said connector shaft side is formed between said pair of gears.
10. (Currently Amended) A hammer drill according to claim 9, wherein ~~the~~ equilibrium positions of the springs that provide forces onto each of the gears of said pair of gears is in the position of said neutral state.

11. (Currently Amended) A hammer drill comprising:

a motor;

a transmission mechanism driven rotationally by said motor;

a connector shaft driven rotationally by said ~~motor~~ transmission mechanism,[[;]]

wherein said [[a]]transmission mechanism is disposed between said motor and
said connector shaft, configured to change a rotational speed ratio between
said motor and said connector shaft;

a spindle having a chuck to hold a drill bit, configured to rotate by a rotational force
through said connector shaft;

a motion converter mechanism configured to convert the rotational force of the said
connector shaft to a reciprocating force in ~~[[the]]~~ an axial direction of said spindle;
and

a percussive member configured to reciprocate in ~~[[the]]~~ an axial direction of said spindle
based on the reciprocating force converted by said motion converter mechanism,
wherein said spindle is percussed by the percussive member, while rotating based on the
rotational force through said connector shaft, and

wherein said transmission mechanism comprises:

a plurality of gears of different diameters which can move in the axial direction
along said connector shaft;

gear teeth provided around said connector shaft;

wherein one of said plurality of gears selectively meshes with said gear teeth of
said connector shaft by a force of a spring.

12. (Currently Amended) A hammer drill according to claim 11, wherein said transmission
mechanism further comprises:

a pinion, having a plurality of gear portions in different diameters, provided on an axle of
said motor[[;]],

~~gear teeth provided around said connector shaft;~~

wherein the [[a]]plurality of gears mesh[[ing]] respectively with the plurality of gear
portions of said pinion respectively, ~~configured to reciprocate along said~~
~~connector shaft,~~

~~wherein one of said plurality of gears selectively meshes with said gear teeth of said connector shaft.~~

13. (Currently Amended) A hammer drill according to claim ~~[[12]]~~11, wherein each of said plurality of gears comprises inner gear teeth to be selectively meshed with said gear teeth of said connector shaft.
14. (Currently Amended) A hammer drill according to claim ~~[[12]]~~11, wherein said plurality of gears are configured to concentrically rotate on said connector shaft.
15. (Previously Presented) A hammer drill according to claim 14, wherein each of said plurality of gears is disposed at an interval in the axial direction of said connector shaft.
16. (Currently Amended) A hammer drill according to claim 15, wherein a gap for a neutral state that ~~neither none~~ of said ~~multiple plurality of~~ gears meshes with said gear teeth of said connector shaft is formed between said plurality of gears.
17. (Currently Amended) A hammer drill according to claim ~~[[12]]~~11, further comprising a spring disposed around said connector shaft for biasing said plurality of gears.
18. (Currently Amended) A hammer drill according to claim ~~[[12]]~~11, further comprising a shifting switch operatively connected to said connector shaft, wherein one of said plurality of gears selectively meshes with said gear teeth of said connector shaft by operation of said shifting switch.